

#2



OIPE

ENTERED

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/080,979

DATE: 03/08/2002

TIME: 15:16:17

Input Set : A:\ISIS5028.ST25.txt

Output Set: N:\CRF3\03082002\J080979.raw

```

3 <110> APPLICANT: Cook, Philip Dan
4      Manoharan, Muthiah
5      Bennett, Frank C.
7 <120> TITLE OF INVENTION: Oligonucleotide Conjugates For Hepatic Delivery
9 <130> FILE REFERENCE: Isis-5028
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/080,979
C--> 11 <141> CURRENT FILING DATE: 2002-02-22
11 <160> NUMBER OF SEQ ID NOS: 78
13 <170> SOFTWARE: PatentIn version 3.1
15 <210> SEQ ID NO: 1
16 <211> LENGTH: 11
17 <212> TYPE: DNA
18 <213> ORGANISM: Artificial Sequence
20 <220> FEATURE:
21 <223> OTHER INFORMATION: Oligonucleotide
23 <220> FEATURE:
24 <221> NAME/KEY: misc_feature
25 <222> LOCATION: (6)..(6)
26 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentyl-N-
phthalimido
27      functionality
30 <400> SEQUENCE: 1
31 ggctgactgc g                                     11
34 <210> SEQ ID NO: 2
35 <211> LENGTH: 20
36 <212> TYPE: DNA
37 <213> ORGANISM: Artificial Sequence
39 <220> FEATURE:
40 <223> OTHER INFORMATION: Oligonucleotide
42 <220> FEATURE:
43 <221> NAME/KEY: misc_feature
44 <222> LOCATION: (9)..(9)
45 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentyl-N-
phthalimido
46      functionality
49 <400> SEQUENCE: 2
50 ctgtctccat cctcttcact                             20
53 <210> SEQ ID NO: 3
54 <211> LENGTH: 20
55 <212> TYPE: DNA
56 <213> ORGANISM: Artificial Sequence
58 <220> FEATURE:
59 <223> OTHER INFORMATION: Oligonucleotide
61 <220> FEATURE:

```

62 <221> NAME/KEY: misc\_feature

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/10/080,979

DATE: 03/08/2002  
 TIME: 15:16:17

Input Set : A:\ISIS5028.ST25.txt  
 Output Set: N:\CRF3\03082002\J080979.raw

```

63 <222> LOCATION: (1)..(20)
64 <223> OTHER INFORMATION: phosphorothioate inter-nucleotide linkage
67 <220> FEATURE:
68 <221> NAME/KEY: misc_feature
69 <222> LOCATION: (9)..(9)
70 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentyl-N-
phthalimido f
71      unctuality
74 <400> SEQUENCE: 3
75 ttgcttccat cttcctcgtc                                20
78 <210> SEQ ID NO: 4
79 <211> LENGTH: 18
80 <212> TYPE: DNA
81 <213> ORGANISM: Artificial Sequence
83 <220> FEATURE:
84 <223> OTHER INFORMATION: Oligonucleotide
86 <220> FEATURE:
87 <221> NAME/KEY: misc_feature
88 <222> LOCATION: (1)..(18)
89 <223> OTHER INFORMATION: phosphorothioate inter-nucleotide linkage
92 <220> FEATURE:
93 <221> NAME/KEY: misc_feature
94 <222> LOCATION: (15)..(15)
95 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentyl-N-
phthalimido f
96      unctuality
99 <400> SEQUENCE: 4
100 tgggagccat agcgaggc                                18
103 <210> SEQ ID NO: 5
104 <211> LENGTH: 18
105 <212> TYPE: RNA
106 <213> ORGANISM: Artificial Sequence
108 <220> FEATURE:
109 <223> OTHER INFORMATION: Oligonucleotide
111 <220> FEATURE:
112 <221> NAME/KEY: misc_feature
113 <222> LOCATION: (1)..(1)
114 <223> OTHER INFORMATION: 2'-O-modified phosphoramidite
117 <220> FEATURE:
118 <221> NAME/KEY: misc_feature
119 <222> LOCATION: (10)..(10)
120 <223> OTHER INFORMATION: 2'-O-modified phosphoramidite
123 <400> SEQUENCE: 5
124 ugggagccau agcgaggc                                18
127 <210> SEQ ID NO: 6
128 <211> LENGTH: 16
129 <212> TYPE: DNA
130 <213> ORGANISM: Artificial Sequence
132 <220> FEATURE:
133 <223> OTHER INFORMATION: Oligonucleotide
135 <400> SEQUENCE: 6

```

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/10/080,979

DATE: 03/08/2002  
 TIME: 15:16:17

Input Set : A:\ISIS5028.ST25.txt  
 Output Set: N:\CRF3\03082002\J080979.raw

```

136 tccaggtgtc cgcac                                     16
139 <210> SEQ ID NO: 7
140 <211> LENGTH: 17
141 <212> TYPE: DNA
142 <213> ORGANISM: Artificial Sequence
144 <220> FEATURE:
145 <223> OTHER INFORMATION: Oligonucleotide
147 <220> FEATURE:
148 <221> NAME/KEY: misc_feature
149 <222> LOCATION: (3)..(3)
150 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentylamino
functional
151         ity
154 <220> FEATURE:
155 <221> NAME/KEY: misc_feature
156 <222> LOCATION: (8)..(9)
157 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentylamino
functional
158         ity
161 <220> FEATURE:
162 <221> NAME/KEY: misc_feature
163 <222> LOCATION: (13)..(13)
164 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentylamino
functional
165         ity
168 <220> FEATURE:
169 <221> NAME/KEY: misc_feature
170 <222> LOCATION: (16)..(16)
171 <223> OTHER INFORMATION: nucleotide functionalized to incorporate a pentylamino
functional
172         ity
175 <400> SEQUENCE: 7
176 ggaccggaac ctacgag                                     17
179 <210> SEQ ID NO: 8
180 <211> LENGTH: 17
181 <212> TYPE: DNA
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: Oligonucleotide
187 <400> SEQUENCE: 8
188 cctggccttc catgctc                                     17
191 <210> SEQ ID NO: 9
192 <211> LENGTH: 17
193 <212> TYPE: RNA
194 <213> ORGANISM: Artificial Sequence
196 <220> FEATURE:
197 <223> OTHER INFORMATION: Oligonucleotide
199 <400> SEQUENCE: 9
200 ccuggccuuc caugcuc                                     17
203 <210> SEQ ID NO: 10
204 <211> LENGTH: 15
205 <212> TYPE: RNA
206 <213> ORGANISM: Artificial Sequence

```

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/080,979

DATE: 03/08/2002  
TIME: 15:16:17

Input Set : A:\ISIS5028.ST25.txt  
Output Set: N:\CRF3\03082002\J080979.raw

```

208 <220> FEATURE:
209 <223> OTHER INFORMATION: Oligonucleotide
211 <400> SEQUENCE: 10
212 chacccaggc ucaga
215 <210> SEQ ID NO: 11
216 <211> LENGTH: 12
217 <212> TYPE: RNA
218 <213> ORGANISM: Artificial Sequence
220 <220> FEATURE:
221 <223> OTHER INFORMATION: Oligonucleotide
223 <400> SEQUENCE: 11
224 gagcucccag gc
227 <210> SEQ ID NO: 12
228 <211> LENGTH: 12
229 <212> TYPE: RNA
230 <213> ORGANISM: Artificial Sequence
232 <220> FEATURE:
233 <223> OTHER INFORMATION: Oligonucleotide
235 <400> SEQUENCE: 12
236 caugcugcag cc
239 <210> SEQ ID NO: 13
240 <211> LENGTH: 20
241 <212> TYPE: DNA
242 <213> ORGANISM: Artificial Sequence
244 <220> FEATURE:
245 <223> OTHER INFORMATION: Oligonucleotide
247 <400> SEQUENCE: 13
248 gccttttcgcg acccaacacu
251 <210> SEQ ID NO: 14
252 <211> LENGTH: 11
253 <212> TYPE: DNA
254 <213> ORGANISM: Artificial Sequence
256 <220> FEATURE:
257 <223> OTHER INFORMATION: Oligonucleotide
259 <220> FEATURE:
260 <221> NAME/KEY: misc_feature
261 <222> LOCATION: (6)..(6)
262 <223> OTHER INFORMATION: hexyl-(N-phthalimido)amino]-uridine
265 <400> SEQUENCE: 14
266 gcgtguctgc g
269 <210> SEQ ID NO: 15
270 <211> LENGTH: 18
271 <212> TYPE: DNA
272 <213> ORGANISM: Artificial Sequence
274 <220> FEATURE:
275 <223> OTHER INFORMATION: Oligonucleotide
277 <220> FEATURE:
278 <221> NAME/KEY: misc_feature
279 <222> LOCATION: (1)..(1)

```

## RAW SEQUENCE LISTING

DATE: 03/08/2002

PATENT APPLICATION: US/10/080,979

TIME: 15:16:17

Input Set : A:\ISIS5028.ST25.txt

Output Set: N:\CRF3\03082002\J080979.raw

```

280 <223> OTHER INFORMATION: 2'-O-modified phosphoramidite
283 <220> FEATURE:
284 <221> NAME/KEY: misc_feature
285 <222> LOCATION: (18)..(18)
286 <223> OTHER INFORMATION: non-nucleoside 6-carbon amino linker
289 <400> SEQUENCE: 15
290 ugggagccat agcgaggc 18
293 <210> SEQ ID NO: 16
294 <211> LENGTH: 18
295 <212> TYPE: DNA
296 <213> ORGANISM: Artificial Sequence
298 <220> FEATURE:
299 <223> OTHER INFORMATION: Oligonucleotide
301 <220> FEATURE:
302 <221> NAME/KEY: misc_feature
303 <222> LOCATION: (10)..(10)
304 <223> OTHER INFORMATION: 2'-O-modified phosphoramidite
307 <400> SEQUENCE: 16
308 tgggagccau agcgaggc 18
311 <210> SEQ ID NO: 17
312 <211> LENGTH: 20
313 <212> TYPE: DNA
314 <213> ORGANISM: Artificial Sequence
316 <220> FEATURE:
317 <223> OTHER INFORMATION: Oligonucleotide
319 <220> FEATURE:
320 <221> NAME/KEY: misc_feature
321 <222> LOCATION: (1)..(1)
322 <223> OTHER INFORMATION: 2'-O-modified phosphoramidite
325 <220> FEATURE:
326 <221> NAME/KEY: misc_feature
327 <222> LOCATION: (1)..(20)
328 <223> OTHER INFORMATION: 2'-O-methyl
331 <220> FEATURE:
332 <221> NAME/KEY: misc_feature
333 <222> LOCATION: (20)..(20)
334 <223> OTHER INFORMATION: non-nucleoside 6-carbon amino linker
337 <400> SEQUENCE: 17
338 uctgagtagc agaggagctc 20
341 <210> SEQ ID NO: 18
342 <211> LENGTH: 21
343 <212> TYPE: DNA
344 <213> ORGANISM: Artificial Sequence
346 <220> FEATURE:
347 <223> OTHER INFORMATION: Oligonucleotide
349 <220> FEATURE:
350 <221> NAME/KEY: misc_feature
351 <222> LOCATION: (1)..(1)
352 <223> OTHER INFORMATION: 2'-O-modified phosphoramidite

```

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/080,979

DATE: 03/08/2002

TIME: 15:16:18

Input Set : A:\ISIS5028.ST25.txt

Output Set: N:\CRF3\03082002\J080979.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date